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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/035,192

01/04/2002

Kimio Muramoto

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06/18/2004

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EXAMINER

NGUYEN, DUC M

ART UNIT	PAPER NUMBER
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2685

9

DATE MAILED: 06/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/035,192

Applicant(s)

MURAMOTO, KIMIO

Examiner

Duc M. Nguyen

Art Unit

2685

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,7,8,10,11,13,14,16 and 17 is/are rejected.
- 7) ☒ Claim(s) 3,6,9,12,15 and 18 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5, 7</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Information Disclosure Statement

1. The references listed in the information disclosure statements submitted on 6/11/02 and 7/9/03 have been considered by the examiner (see attached PTO-1449).

Specification

2. The disclosure is objected to because of the following informalities:
 - Regarding the term "frequency central value of the window" as used in the entire specification, it appears that such the above term is used to means "the center position of the window". Therefore, in order to eliminate confusions, it is suggested that either the entire specification is amended or the term "the center position" be inserted in a bracket immediately after the term "frequency central value" in line 4, page 6 of the specification for clarification purpose.Appropriate correction is required.

3. Claims 4-6 are objected to because of the following informalities:
 - As to claims 4, 5, 6, "to" should be deleted from "with ~~to~~ one time change" in line 3 of the claims.Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims **1-2, 4-5, 7-8, 10-11, 13-14, 16-17** are rejected under 35 U.S.C. 103(a) as being unpatentable by **Popovic** (US 6,370,397).

Regarding claim **1**, **Popovic** discloses a search window delay tracking in CDMA system (see Abstract, Figs. 3, 6 and 12), wherein a mean or average delay is calculated and an adjustment is made to reduce the error so that the center of the search window and the mean CIR delay are aligned (see Fig. 12), and wherein the mean delay is calculated from a plurality of delays corresponding to a plurality of correlating devices which perform correlation values between the input signals and PN spreading code (see Fig. 6, col. 3, lines 20-53 and col. 5, lines 35-50), this would include all the claimed limitations, wherein the error between the mean CIR delay and the center of the search window would read on a deviation amount as claimed, and it is clear that the sign of the error value would read on the deviation direction as claimed. Further, although the search window delay tracking is described for base stations, it is clear that the method would work for mobile stations as well (see **Popovic**, col. 6, lines 10-14). Therefore, the claimed limitation is made obvious by Popovic for providing a window moving means as claimed, for improving synchronization acquisition performance of mobile stations.

Regarding claim **2**, the claim is rejected for the same reason as set forth in claim 1 above. In addition, it is clear that the error between the mean CIR delay and the

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center of the search window as disclosed by Popovic is equivalent to the average of the differences between the center of the search window (frequency central value) and the delays (detected synchronization timings). However, Popovic fails to disclose the adjustment of the center position of the window is made when the error (the average) exceeds a predetermined threshold value. However, it is noted that if the error was close to zero or a very small number less than 1, there would be no adjustment on the window position. Therefore, by considering a zero or a very small number as a predetermined threshold value, the claimed limitation is made obvious by Popovic for providing a threshold as claimed, for reducing unnecessary computation when very small errors occurred in the synchronization.

Regarding claims **4-5**, the claims are rejected for the same reason as set forth in claims 1-2 above. In addition, it would have been obvious that when the error is close to one clock shift, the center of the search window (frequency central value) is shifted by only one clock with one time change as claimed.

Regarding claims **7-8**, the claims are interpreted and rejected for the same reason as set forth in claims 1-2 above. In addition, Popovic discloses the center of the search window (frequency central value) is shifted by the error (detected deviation amount) as claimed (see Fig. 12).

Regarding claims **10-11, 13-14, 16-17**, the claims are interpreted and rejected for the same reason as set forth in claims 1-2, 4-5, 7-8 above, respectively.

Allowable Subject Matter

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6. Claims 3, 6, 9, 12, 15 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: As to claims 3, 12, the cited prior art of record fail to disclose or make it obvious an apparatus or method for adjusting the center window of the window based on the previous adjustment value and the detected adjustment amount which comprises steps as specified in the claims.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- **Du Reau et al** (US 6,717,996), Digital signal timing synchronization process.
- **Miura** (US 6,580,749), CDMA receiver having controllable search range and method for controlling the same.
- **Wilk** (US 5,818,866), Method of selecting propagation delays retained for receiving messages transmitted by spread spectrum radio communication.
- **Kenny** (US 6,144,691), Method and apparatus for synchronizing to a direct sequence spread spectrum signal.
- **Petranovich** (US 5,625,652), Timing recovery controller and method for adjusting the timing of synchronizing window in a PSK demodulator.

8. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

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or faxed to:

(703) 872-9314 (for formal communications intended for entry)

(for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington VA, Sixth Floor (Receptionist).

Any inquiry concerning this communication or communications from the examiner should be directed to Duc M. Nguyen whose telephone number is (703) 306-4531, Monday-Thursday (9:00 AM - 5:00 PM). Or to Edward Urban (Supervisor) whose telephone number is (703) 305-4385.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-4700.

Duc M. Nguyen



June 12, 2004